Chapter One

# Introduction

Economists have focused their attention in recent years on problems in the financial services industry and the implications these problems have for the overall economy. The causes of the solvency crisis in the savings and loan industry during the late 1970s and 1980s are well documented, but the impact of these difficulties on the economy is only now being more fully understood.[1] Although financial problems in the commercial banking industry have been less acute than those in the savings and loan industry, some policymakers cite them as being partly responsible for the slowdown in the growth of loans at banks during the early 1990s. Financial problems have also plagued the insurance industry, and policymakers worry about the possibility of a solvency crisis in the insurance industry and what costs it might impose on the economy.

This study considers the potential economic impacts of a possible solvency crisis in the insurance industry and various policy options for limiting these impacts. It does not evaluate the likelihood of such a crisis, though it reviews a variety of ways one could arise. Instead, the study hypothetically assumes that solvency problems could exist on a large enough scale to have significant impacts on the overall economy, and then lays out what these macroeconomic impacts might be. The focus is not on the economic impacts of the event that precipitated the problems in the first place, such as a natural disaster, but on what additional impacts may arise solely from a solvency crisis in the insurance industry.

## Solvency Problems in the Insurance Industry

Like those in the banking and savings and loan industries, the number of insolvencies in the insurance industry has grown during the past decade. Between 1976 and 1980, a total of 77 insurance companies failed. Between 1981 and 1985, the overall number more than doubled, to 165; and the number doubled again, to 333, between 1986 and 1990. In 1991, a record number of insolvencies (110) took place, but the number fell to 91 in 1992.[2] About 30 insolvencies in these two years combined resulted from stricter regulatory oversight in Louisiana and catastrophic claims on damages caused by Hurricanes Andrew and Iniki.

1. A Congressional Budget Office study estimated that the cost of the crisis could amount to $200 billion in lost output during the 1980s alone. See CBO, *The Economic Effects of the Savings & Loan Crisis* (January 1992).

2. The insolvency figures include firms that only became financially impaired, but most later became insolvent. A company can appear in more than one year if its financial status varied between impaired and healthy. Only a very small number of companies, however, are counted twice. The figures come from John H. Snyder, "The Year of the Cats," in A.M. Best Company, Inc., *Best's Review: Property/Casualty Insurance Edition* (Oldwick, N.J.: A.M. Best Company, Inc., February 1993); *Best's Insolvency Study: Life/Health Insurers, 1976-1991* (June 1992); and updates by A.M. Best Company, Inc.

Not only has the number of insolvencies increased during the past decade, but different types of insurance companies are now running into trouble. Before the 1980s, insolvencies were concentrated among small companies operating in a single state or on a limited regional basis; most of the insolvent property and casualty insurers were automobile insurers.[3] More recently, however, insolvencies have involved larger companies operating over a much wider, multistate area and selling different kinds of insurance policies. Between 1976 and 1991, more than 40 percent of the insolvencies in the life and health insurance industry occurred among health insurers.[4]

As the number and size of insolvencies have grown, so has the cost of resolving them. When an insurer becomes insolvent and the value of its assets is less than the value of its obligations to its policyholders, the remaining solvent insurers are assessed a percentage of their premium receipts to cover the claims of the insolvent firm's policyholders up to prescribed limits. The mechanisms for collecting and disbursing these assessments are the state guaranty funds--associations of licensed insurers in each state. During the 1980s, assessments for the insolvencies of both life and health insurers and property and casualty insurers grew rapidly. These assessments, or costs of failure, are shown in Table 1.

Although the solvency problems of the insurance industry have grown to worrisome levels during the past decade, they have been considerably smaller than those of the savings and loan industry. The failure rates in the insurance industry have been similar to those of the banking industry, but the dollar amount and the percentage of the industry's assets held by insolvent firms have been much smaller. The costs of failure have also been

**Table 1.**
**Various Measures of Solvency Problems Among Financial Institutions**

| | Insurance | | | |
|---|---|---|---|---|
| | Life and Health | Property and Casualty | Banks | Savings and Loans |
| **Failed Firms[a]** *Annual Average Number* | | | | |
| 1981-1985 | 12 | 21 | 60 | 36 |
| 1986-1990 | 28 | 39 | 189 | 130 |
| 1991 | 65 | 45 | 127 | 232 |
| 1992 | 31 | 60 | 122 | 69 |
| *Annual Average Percentage of Firms* | | | | |
| 1981-1985 | 0.51 | 0.62 | 0.41 | 1.09 |
| 1986-1990 | 1.05 | 1.01 | 1.44 | 4.96 |
| 1991 | 2.44 | 1.15 | 1.07 | 11.07 |
| 1992 | 1.20 | 1.54 | 1.06 | 3.72 |
| **Assets of Failed Firms** *Annual Average in Billions of Dollars* | | | | |
| 1981-1985 | 0.957 | 0.964 | 7.028 | 9.529 |
| 1986-1990 | 0.606 | 0.975 | 22.891 | 45.882 |
| 1991 | 42.576 | 0.590 | 63.300 | 75.947 |
| 1992 | n.a. | 1.724 | 44.231 | 35.339 |
| *Annual Average Percentage of Industry Assets* | | | | |
| 1981-1985 | 0.15 | 0.33 | 0.30 | 1.29 |
| 1986-1990 | 0.05 | 0.21 | 0.72 | 3.96 |
| 1991 | 2.83 | 0.10 | 1.80 | 8.67 |
| 1992 | n.a. | 0.27 | 1.26 | 4.45 |
| **Annual Average Costs of Failure[b] (Billions of dollars)** | | | | |
| 1981-1985 | 0.025 | 0.106 | 1.257 | 0.722 |
| 1986-1990 | 0.099 | 0.611 | 3.809 | 16.355 |
| 1991 | 0.773 | 0.435 | 7.400 | 34.506 |
| 1992 | 0.674 | 0.361 | 4.710 | 6.715 |

SOURCE: Congressional Budget Office based on data from A.M. Best Company, Inc.; National Conference of Insurance Guaranty Funds; National Organization of Life and Health Insurance Guaranty Associations; and Office of the Comptroller of the Currency, Bank Research Division.

NOTE: n.a. = not available.

a. For banks and savings and loans, failed firms are resolutions.

b. Costs of failure cover only the costs of meeting obligations to depositors and policyholders. For the insurance industry, they refer to net assessments collected by guaranty funds. They do not include any future assessments to be collected for past insolvencies. The figures for the savings and loan industry do not include conservatorships, which began in 1989.

3. General Accounting Office, *Insurer Failures, Property/Casualty Insurer Insolvencies and State Guaranty Funds*, GGD-87-100 (July 1987), p. 15.

4. A.M. Best Company, Inc., *Best's Insolvency Study: Life/Health Insurers, 1976-1991.*

much lower in the insurance industry than in the banking and savings and loan industries.

During the early 1990s, however, the solvency problems of the life insurance industry increased, climaxing in the failure in 1991 of several large insurers--Executive Life Insurance Company, First Capital Life Insurance Company, Fidelity Bankers Life Insurance Company, Monarch Life Insurance Company, and Mutual Benefit Life Insurance Company. Assessments for Executive Life are expected to total $2.1 billion over five years, with the bulk yet to be paid. Solvency problems among life and health insurers appear to have fallen considerably in 1993.

Of course, even though solvency problems of the insurance industry have been relatively small, they may not always stay that way. Indeed, the life and health industry arguably came close to a solvency crisis in 1991. Other unknown factors may also act to raise the chances of a solvency crisis over the next few years. For example, book-value accounting and other inadequacies in the solvency regulation of insurers may be hiding losses on commercial mortgages and real estate that threaten a solvency crisis. Determining that possibility, however, is beyond the scope of this study.

## What Would a Solvency Crisis in the Insurance Industry Look Like?

A solvency crisis would differ from the solvency problems that typically occur in a given year by the extent of the damage to overall economic activity. Routine solvency problems do not have a significant impact on the overall economy: they are small in number and size, and the state guaranty funds are able to fulfill obligations to the policyholders of the insolvent insurers.

A solvency crisis would be much more serious. For example, it could involve the simultaneous insolvency of many insurers in one of the industries, accounting for a significant fraction of the industry's assets. In this respect, it would be similar to the crisis in the savings and loan industry.[5] It could also entail the insolvency of one or several large insurers, thereby shaking the confidence of policyholders and possibly that of financial markets as well, as almost happened to the life insurance industry in 1991. It could encompass just one of the two industries, or both the life and health and property and casualty industries, since some insurance groups (multiline insurers) have affiliates in both industries. Or it could even be some combination of these forms. Whatever the form, a solvency crisis in the insurance industry would noticeably harm the overall economy, as did the solvency crisis in the savings and loan industry.

## How the Insurance Industry Affects Economic Activity

The insurance industry affects economic activity by selling financial assets that people want to buy and buying other financial assets that people want to sell. To put it another way, the insurance industry affects economic activity through its financial intermediation. The assets it sells--its liabilities--are insurance policies against a wide assortment of risks of economic loss and a variety of investment products such as annuities and guaranteed investment contracts (GICs) that life insurers sell. The assets it buys are mainly corporate stocks and bonds and commercial mortgages. This intermediation reduces the cost of avoid-

5. In 1990, for example, the insurance industry included about 6,000 companies, with 3,900 in the property and casualty industry. Because many insurance companies are affiliates of other companies (groups), the number of insurance organizations is much smaller. Of the 2,274 property and casualty companies examined by A.M. Best Company, Inc., in 1989, for example, 1,452 were affiliates of 371 groups, and 822 were individual companies.

ing risks and makes credit markets more liquid and efficient.

The insurance industry's financial intermediation is sizable according to a variety of measures. At the end of 1992, for example, the insurance industry ranked as the second largest financial intermediary in the United States, holding about $2,200 billion in assets, after U.S.-chartered commercial banks (about $2,800 billion) and tied with private pension funds. The life and health industry holds almost three-quarters of the insurance industry's assets, the size of which now surpasses the thrift industry, the fourth largest intermediary (about $1,347 billion). In 1992, the amount of life insurance in force in the United States totaled about $10,400 billion, and the payments to policyholders and beneficiaries of life insurance policies totaled about $57 billion. Payments by U.S. property and casualty insurers on claims for losses totaled about $199 billion in 1992. Moreover, the insurance industry has channeled more than $120 billion annually to credit markets in the United States in recent years. That amount averages about 22 percent of all funds supplied by private financial intermediaries.[6] Life insurers accounted for the lion's share--about 75 percent--of this total.

## Spreading Risks

One way that the insurance industry encourages economic activity is by pooling the risks of many policyholders. This insurance mechanism reduces the amount of resources necessary to provide a given level of protection and thereby frees up resources that can be used for other purposes.

**The Insurance Mechanism.** Insurance protects a policyholder from loss by spreading the policyholder's risk among the other policyholders and the owners of the insurance company. Policyholders pay premiums to insurance companies for protection during a specific period of time. These premiums add to the reserves of insurance companies, which are used to finance payments to policyholders. When a policyholder suffers an insured loss and files a claim for loss with his or her insurer, the insurer pays for the loss by drawing down its reserves by the amount of the claim. Because all policyholders typically do not suffer losses at the same time, the insurer can lower the amount of reserves it needs to hold against the potential losses of policyholders.

An insurer can also effectively spread these risks among policyholders of other insurers using "reinsurance." Insurance companies buy reinsurance to guard against the risks they have insured. Like individuals and businesses that wish to lower their exposure to the various risks of everyday life, an insurance company may wish to lower its exposure to the risks it has insured. This case is particularly true when a risk is large relative to the insurance company's capital and surplus and when many of its risks have similar chances of occurring.[7] An insurance company can spread some of its risks by paying other insurers, known as reinsurers, to assume these risks.

The reinsurance transaction is straightforward. A primary insurance company--one that writes life, health, property, or casualty insurance--pays for the reinsurance by giving or ceding a portion of the associated premium receipt to the reinsurer, which is willing to assume the risk. The reinsurer in turn pays the primary insurer a ceding commission as a payment for originating the policy and agrees to pay the primary insurer a portion of the loss associated with the risk. Note, however, that the primary insurer remains liable for paying all losses to insured parties in the event that the reinsurer does not pay.

6. Board of Governors of the Federal Reserve System, "Flow of Funds Accounts: Flows and Outstandings, Second Quarter 1993" (September 17, 1993).

7. The capital and surplus of an insurer is its net worth--its assets minus its liabilities--and is a measure of the capacity of an insurer to write insurance policies. The largest component is the surplus, which is the accumulated stock of the retained earnings of an insurer. Capital is the equity capital of stock-chartered insurance companies.

A risk insured by a primary insurer can be spread among a large number of reinsurers. After the primary insurer cedes the risk, the reinsurer may reinsure some of the risk with other insurance companies called "retrocessionaries," which in turn also may reinsure some of the risk with other insurers, and so on. In the terminology of the insurance industry, a reinsurer may "retrocede" its risks to other reinsurers.

Because property and casualty risks are generally more difficult to estimate than life and health risks, reinsurance is more prevalent among property and casualty insurers than among life and health insurers. For example, U.S. property and casualty companies ceded insurance premiums totaling about $160 billion, or about 67 percent of the $240 billion of direct premiums written in 1992. By contrast, U.S. life and health companies ceded about $35 billion, or about 18 percent of their direct premiums written in 1992.[8]

Reinsurance not only spreads risks more widely, but also increases the supply of insurance. A primary insurer cannot write policies beyond its underwriting capacity, the amount that its capital and surplus can support. By ceding risks to reinsurers, a primary insurer essentially frees up a portion of its surplus that can be used to support more insurance policies.

Apart from policyholders, the owners or equityholders of insurance companies also assume some of the insurance risks. In particular, they assume some of the risk of abnormally large losses by policyholders because the chances and the magnitudes of losses are not known with certainty. When insured losses are abnormally large, but not large enough to cause the insurance company to fail, the equityholders of the company must bear some of the burden of paying for the abnormal losses through lower dividends and a drop in the market value of the insurers' equity.

The protection given to a single policyholder arises because losses are spread widely, not because losses are eliminated for the whole economy. When a natural disaster destroys property, for example, this destruction is a permanent loss for the economy, which lowers the productive capacity of the economy. Property insurers pay policyholders for the insured losses they have suffered, but they do so by withdrawing funds from their resources: reserves and capital and surplus. The total loss of property to the economy is not changed. The lost property is replaced by reducing the financial capital of insurers.

**The Benefit of Pooling Risk.** Pooling risk enhances social welfare. It makes individuals and businesses better off not only because they generally do not like certain risks but also because pooling risk makes a wider assortment of goods and services available to individuals and businesses. Individuals are more willing to own houses and cars, for example, when they can buy insurance against costly accidents to, or created by, these items. Businesses are more willing to supply products such as medical drugs when they can buy product liability insurance. The larger supply of goods and services from these risky activities does not necessarily come at the expense of a smaller supply of low-risk activities. Risk pooling promotes a greater level of economic activity than would exist without insurance.[9] By pooling many risks, insurance companies can economize on the amount of resources necessary to provide a given level of risk pooling, and thereby free up resources that they can use for other purposes.[10]

8. The estimates for property and casualty reinsurance are taken from A.M. Best Company, Inc., *Best's Aggregates and Averages: Property-Casualty 1993* (Oldwick, N.J.: A.M. Best Company, Inc., 1993), p. 3. Those for life and health are from *Best's Aggregates and Averages: Life-Health 1993*, p. 47.

9. This point is made by Kenneth J. Arrow, *Essays in the Theory of Risk-Bearing* (Chicago: Markham Publishing Company, 1971), p. 137.

10. John M. Marshall, "Insurance Theory: Reserves Versus Mutuality," *Economic Inquiry*, vol. 12 (December 1974), pp. 476-492. See also James Tobin, "Financial Intermediaries," in John Eatwell, Murray Milgate, and Peter Newman, eds., *The New Palgrave: Finance* (New York: W.W. Norton & Company, Inc., 1989), p. 44.

## Improving the Liquidity and Efficiency of Credit Markets

As a financial intermediary, the insurance industry makes credit markets more liquid and efficient. Insurance companies buy an assortment of assets in existing financial markets; in the case of corporate bonds and commercial mortgages, they also buy directly from borrowers. The expertise and diversification of investment risks gained from ongoing participation in the credit markets lower the cost of borrowing, extend the opportunity for borrowing to a broader range of borrowers, and increase the range and return of investments for savers.

**Sources of Loanable Funds for Insurance Companies.** Insurance companies have two primary sources of funds: premium receipts from the sale of their insurance and investment products, and net investment income earned on their assets. The amount of funds that insurance companies have available for lending to financial markets is the sum of these two sources of funds less benefits and losses paid out to policyholders, less other policy-related expenses such as commissions, and less other normal costs of operating a business--including taxes. This amount varies according to several factors: the overall business climate; profitability and competitive pressures in the insurance industry; incidence of catastrophes; and, for life and health insurers, the competitiveness of their investment products with those of other financial institutions.

**Premium Receipts.** Insurance companies receive premiums from the sale of their products to households and businesses. For property and casualty insurers, premium receipts are derived solely from the sale of pure or term insurance policies; in 1992, such premiums totaled about $229 billion (see Table 2). The two largest types of premium receipts for the industry as a whole in 1992 were liability insurance for private-passenger automobiles (about 24 percent of premiums earned) and insurance against physical damage on private-passenger automobiles (about 14 percent).

Life insurers obtain premiums not only from the sale of pure or term insurance policies, but also from the sale of three types of investment products. The first type includes whole life, universal life, and endowment insurance policies. A portion of the premiums on these policies pays for life insurance coverage, and the remainder adds to the cash surrender value of the policy. This cash surrender value can be thought of as a type of savings account whose interest is not taxed as it accrues, whose balance receives only limited protection from the state guaranty funds, and whose deposits and withdrawals are restricted. Insurance companies invest this cash surrender value in income-earning financial assets, thereby providing funds to financial markets.

The second type of investment product that life insurers sell is the annuity. An annuity is a financial asset that makes a fixed payment

**Table 2.**
**Sources of Loanable Funds in 1992**
**(In billions of dollars)**

| | Life and Health | Property and Casualty |
|---|---|---|
| Premium Receipts | 281.6 | 229.3 |
| Plus Net Investment Income | 105.8 | 34.4 |
| Plus Other Income | 26.4 | 0 |
| Minus Benefits, Losses, Expenses, Commissions, Dividends, and Taxes | 330.0 | 243.7 |
| Equals Total Loanable Funds | 83.9 | 20.0 |

SOURCE: Congressional Budget Office based on data from A.M. Best Company, Inc., *Best's Aggregates and Averages: Life-Health 1993*, and *Best's Aggregates and Averages: Property-Casualty 1993* (Oldwick, N.J.: A.M. Best Company, Inc., 1993).

NOTE: Other income includes income earned from managing the assets owned by employee benefit, pension retirement, and profit-sharing plans. For example, life insurance companies managed $768 billion in assets of private pension and retirement plans in 1992, according to the *1993 Life Insurance Fact Book Update* (Washington, D.C.: American Council of Life Insurance, 1993), p. 26.

to the owner at regular intervals over a specified period of time, which can be several years or the remainder of the owner's life. It can be purchased by making a single payment or several payments over time. Individuals and companies typically buy annuities for retirement and pension purposes.

The third type of investment product life insurers sell is the guaranteed investment contract. GICs are much like time deposits at a depository institution, only without federal "deposit" insurance. Funds in the amount of $500,000 to more than $100 million are placed "on deposit" with an insurer for a specific period of time, during which the interest rate paid on the funds may be contractually fixed.[11] When the contract matures, the insurer pays the principal and interest to the owner and the contract is canceled. Life insurers invented GICs in order to compete for funds from pension funds and profit-sharing and savings plans.[12]

Sales of annuities and GICs are now the largest single source of funds for life insurers, reflecting a continuing shift in their product mix. In 1965, for example, premium receipts from sales of annuities were about 9 percent of total premiums; by 1978, they accounted for about 21 percent; and by 1992, they represented about 47 percent.[13]

**Net Investment Income.** Insurers receive income from the investment of their reserves and capital and surpluses. Policyholders typically pay their premiums before the period of their insurance coverage. Insurance regulators require that insurers place these advance premiums in an unearned premium reserve until they are earned as time passes and insurance coverage is provided. The funds in this reserve are invested in income-earning financial assets. After the premiums are earned, some may be placed in a loss reserve, which is used to pay for policyholders' future losses; some may be used to pay for insured losses and benefits, operating expenses, and dividends; some may be added to a reserve to cover unexpected declines in asset values; and the remainder is added to the surplus of the company. The capital and surplus and reserves remain invested in financial markets and generate investment income. Net investment income is gross income from investments minus related expenses.

**Changes in the Supply of Funds Provided by the Insurance Industry.** The share of funds that insurance companies supplied to the credit markets rose during the 1980s. By 1990, it had risen to more than 30 percent of all funds supplied by private financial intermediaries (see Figure 1).[14] This increase contrasts with the three economic expansions before 1982, when the share of funds supplied by insurance companies declined. The share fell when life insurers suffered financial problems in 1991. It also fell sharply in 1992 when property and casualty insurers suffered large losses from catastrophes.

Three factors may account for the greater share of funds supplied by insurance companies. The first is that solvency problems reduced the amount of financial intermediation by banks and savings institutions in recent years. The second is that life insurers introduced new products beginning in the late 1970s, such as universal life insurance policies, that offered more competitive yields than their earlier products.[15] Finally, property and

11. William Jackson and Jean Rosales, "Bank Investment Contracts and Guaranteed Investment Contracts in Pension Plan Finance," 90-203E (Congressional Research Service, April 15, 1990), p. 2.

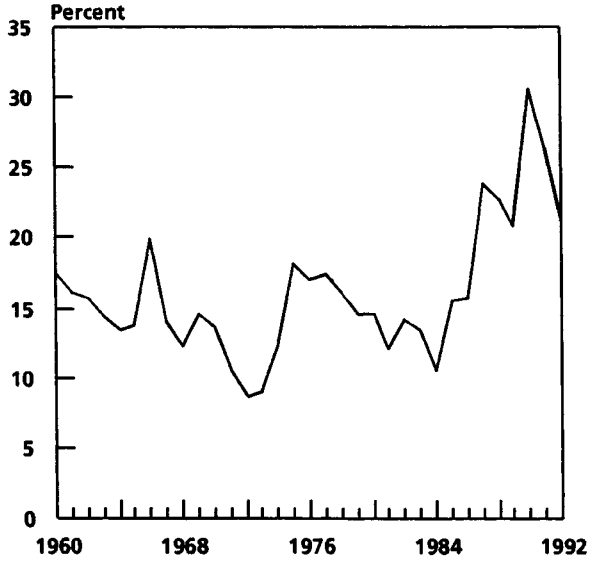
12. Everett Allen, Joseph Melone, and Jerry Rosenbloom, *Pension Planning: Pensions, Profit Sharing, and Other Deferred Compensation Plans* (Homewood, Ill.: Richard D. Irwin, Inc., 1981), pp. 236-237.

13. A change in reporting requirements accounts for some of the increase in the annuity share of premiums after 1985.

14. Private financial intermediaries (banks, thrifts, insurers, finance companies, pension funds, and credit unions) accounted for about 59 percent of all funds supplied to credit markets in recent years, according to the flow of funds accounts compiled by the Federal Reserve Board.

15. For a discussion of these new life insurance products, see Emmett J. Vaughan, *Fundamentals of Risk and Insurance* (New York: John Wiley and Sons, 1989), pp. 266-268.

**Figure 1.**
**The Insurance Industry's Share of Funds Supplied by Private Financial Intermediaries to the Credit Markets, 1960-1992**




SOURCE: Congressional Budget Office based on data from the Board of Governors of the Federal Reserve System.

casualty insurers raised their premium rates a great deal during the mid-1980s as their income from underwriting activities fell. During this time, a crisis in the liability insurance market arose, with sharp increases in premium rates and reductions in coverage.[16]

## Uses of Funds--Assets of the Insurance Industry

The insurance industry invests mostly in bonds, commercial mortgages, and stocks, but the nature of the insured risks and tax liabilities determines the composition of asset portfolios and the holdings of capital and surplus.[17] Life insurers, whose insurance risks are long term and relatively easy to estimate, invest more heavily in assets with long maturities and higher yields, such as corporate bonds and mortgage loans (Table 3).[18] In contrast, property and casualty companies, whose insurance risks are more difficult to estimate, tend to invest in very liquid, shorter-term assets such as short- and medium-term government bonds and stocks; they also hold tax-exempt securities because, unlike life insurers, all of their profits are taxable.

**Credit Markets Most Affected by the Insurance Industry.** The insurance industry has tended to have its greatest impact in the markets for corporate bonds, commercial mortgages, and tax-exempt securities. Its share of these markets has been significant and relatively stable since at least the early 1970s. Its share of residential mortgages has fallen over time, but its share of U.S. Treasury and government agency securities has risen (see Table 4).

The insurance industry--particularly the life and health segment--dominates the market for corporate bonds. Corporations rely quite heavily on bonds to finance investments in plant and equipment and for other purposes. For example, nonfinancial corporations obtained an average of about 57 percent of their credit-market funds from sales of bonds over the 1983-1989 period.[19] The insurance industry accounted for an average of about 45 percent of the purchases by U.S. residents of net issues of corporate and foreign bonds between 1982 and 1992. And at the end of 1992, the insurance industry held about 38 percent of the $1,966 billion of outstanding corporate and foreign bonds; private pension plans were the next largest holder with about 15 percent.

Most of the corporate bonds held by the insurance industry are public, investment-grade

16. For evidence on the liability crisis, see Scott E. Harrington, "A Retrospective on the Liability Insurance Crisis," *CPCU Journal* (March 1990), pp. 17-28.

17. State regulations also play a role by specifying the types of assets insurance companies may own.

18. Timothy Cury and Mark Warshawsky, "Life Insurance Companies in a Changing Environment," *Federal Reserve Bulletin*, vol. 72, no. 7 (July 1986), p. 455.

19. See Leland Crabbe, Margaret Pickering, and Stephen Prowse, "Recent Developments in Corporate Finance," *Federal Reserve Bulletin*, vol. 76, no. 8 (August 1990), pp. 593-603.

issues of large companies, and a significant fraction held by the life insurance industry are private placements, which are issues of mostly small and medium-sized businesses. These smaller companies depend on the life insurance industry for financing their longer-term needs because they have limited access to or cannot afford the public bond market, which is dominated by large companies.

The market for commercial mortgages also relies heavily on the insurance industry for funds. The insurance industry, particularly the life and health sector, has traditionally provided long-term financing for commercial properties such as office buildings, shopping centers, warehouses, and factories. At the end of 1992, the insurance industry was the second largest holder of commercial mortgages, accounting for about 29 percent of the $710 billion outstanding in the commercial mortgage market. Commercial banks were the largest holder, with $328 billion, or 46 percent.

Typically, the industry's mortgage loans are for completed projects, replacing the short-term financing used for construction and start-up costs. These loans generally carry lower risk than other commercial mortgage loans because insurers require that the cash flow from the project cover a multiple of the property's debt service before the loan is made.

In recent years, however, some life insurers have made large amounts of risky, short-term loans on commercial real estate. These loans have the potential to create financial problems for those insurers that invested heavily in them.

The market for tax-exempt securities relies on the property and casualty industry for a large amount of financing. This financing takes the form of obligations that state and local governments, nonprofit organizations, and nonfinancial corporations issue in the form of industrial revenue bonds; the interest income from these obligations is exempt from federal income taxes. Households are the primary source of funds for this market, both directly and indirectly through mutual funds and money market mutual funds, but the property and casualty industry is also an important participant. The market for tax-exempt securities had $1,197 billion outstanding at the end of 1992, and the property and casualty industry was the third largest holder, with about $134 billion, or 12 percent of the total.

Some issuers of tax-exempt securities also rely on the insurance industry to provide insurance, or guarantees, on their tax-exempt securities. The use of insurance coverage has been available since the early 1970s. By purchasing insurance, the issuers are probably able to reduce their interest costs because they can offer an extra layer of protection to investors against potential delays in interest payments or against defaults on interest and principal. An example of insured securities is those issued by state and local housing author-

**Table 3.**
**Consolidated Balance Sheets for the Life and Health Insurance and Property and Casualty Insurance Industries, 1992 (In billions of dollars)**

| | Life and Health[a] | Property and Casualty |
|---|---|---|
| Assets | | |
| Bonds | | |
| Corporate | 588.2 | 88.1 |
| U.S. government | 127.1 | 109.7 |
| Other government | 147.6 | 183.9 |
| Mortgage loans | 237.6 | 5.4 |
| Stocks | 48.2 | 71.4 |
| Other | 230.9 | 178.8 |
| Total | 1,379.6 | 637.3 |
| Liabilities | | |
| Reserves | 1,154.3 | 414.3 |
| Other | 134.5 | 59.9 |
| Total | 1,288.8 | 474.2 |
| Capital and Surplus | 90.8 | 163.1 |

SOURCE: Congressional Budget Office based on data from A.M. Best Company, Inc., *Best's Aggregates and Averages: Life-Health 1993*, and *Best's Aggregates and Averages: Property-Casualty 1993* (Oldwick, N.J.: A.M. Best Company, Inc., 1993).

a. "Separate account" assets, liabilities, and surplus are excluded from these totals. Separate accounts are assets managed by life insurers for corporate and other pension plans and other owners. The assets shown are known as "general account" assets, which back the industry's insurance and investment products.

ities to finance the construction of affordable housing projects.

Other mortgage markets directly receive relatively few of their funds from the insurance industry. The industry has reduced its share of home mortgages substantially, virtually abandoning the market for mortgages on one- to four-family structures. However, the industry indirectly supplies funds to this market by its purchases of mortgage-backed securities issued by government-sponsored enterprises, shown under Federal Agency in Table 4. The industry has also reduced its share of the market for multifamily mortgages from about 20 percent in the 1970s to about 10 percent in 1992.

**Ratios of Capital and Surplus to Assets.** The capital and surplus of an insurer is its capital base or cushion against extraordinary losses that threaten the health of the company. The life insurance industry, whose insurance risks are relatively easy to estimate, has held considerably less capital and surplus funds relative to assets than has the property and casualty industry. For example, at the end of 1992, the ratio of capital and surplus to assets, measured on a book- or amortized-value basis, was 8.1 percent in the life and health industry and 25.6 percent in the property and casualty industry (see Figure 2).

The increase in this ratio for life and health insurers in 1991 and 1992 does not necessarily suggest that the industry is moving to firmer financial ground. Much of the increase resulted from a sharp increase in capital gains, particularly net unrealized gains on their investments in bonds and corporate stocks, though these insurers also sharply increased their additions to surplus. A stronger financial position for the life and health industry still awaits a recovery in the market for commercial real estate.

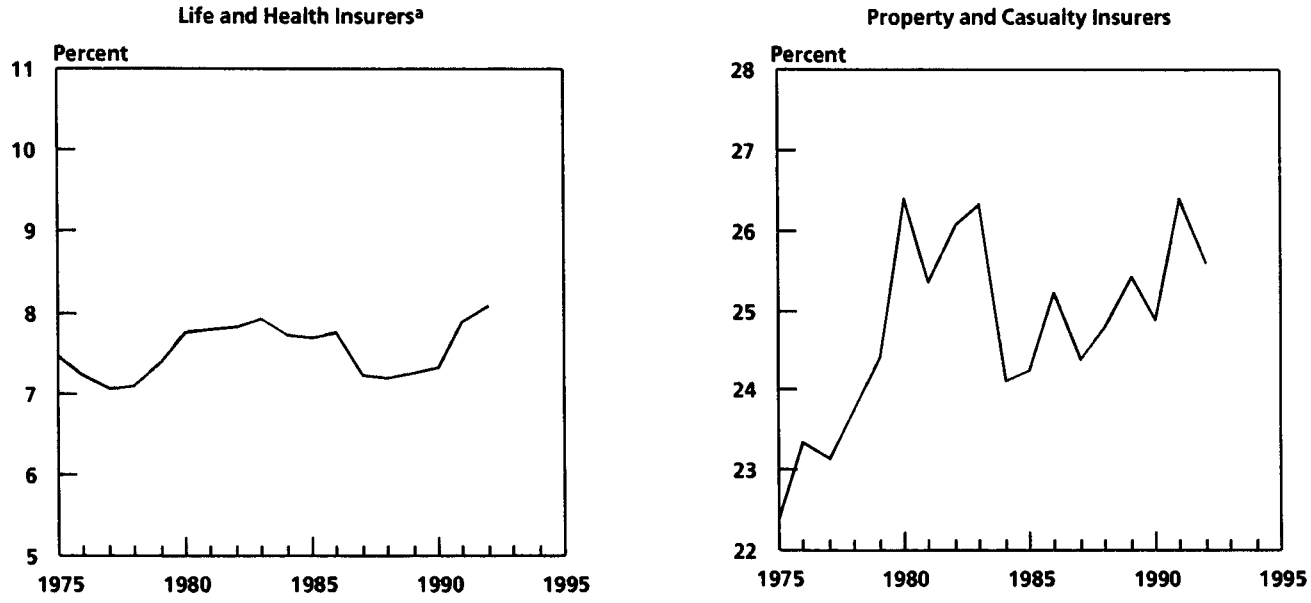
The financial strength of the property and casualty industry also can be questioned. This industry, too, benefited from strong capital gains in both 1991 and 1992, but it suffered a record amount of insured losses from catastrophes in 1992 that exceeded the increase in its capital and surplus in 1991. The industry has since attempted to reduce its exposure to future natural catastrophes, but it is too soon to know the success of this effort.

**Table 4.**
**Share of Outstanding Credit-Market Instruments Held by the Insurance Industry (In average percentages of total for each type)**

| Period | Corporate and Foreign Bonds | Equity | Mortgages | | Government Bonds | | |
|---|---|---|---|---|---|---|---|
| | | | Commercial | Multifamily Residential | U.S. Treasury | Federal Agency | Tax-Exempt |
| 1970-1979 | 38.5 | 4.5 | 29.0 | 19.9 | 2.3 | 4.8 | 17.5 |
| 1980-1984 | 38.9 | 5.3 | 30.7 | 12.7 | 3.2 | 7.2 | 21.3 |
| 1985-1990 | 36.2 | 4.9 | 27.3 | 8.7 | 5.5 | 10.0 | 14.8 |
| 1991 | 38.8 | 4.8 | 29.2 | 9.7 | 6.2 | 12.2 | 12.9 |
| 1992 | 38.2 | 4.5 | 29.0 | 9.6 | 6.5 | 13.4 | 12.2 |

SOURCE: Congressional Budget Office based on data from Board of Governors of the Federal Reserve System, "Flow of Funds Accounts: Flows and Outstandings, Second Quarter 1993" (September 17, 1993).

**Figure 2.**
**Capital and Surplus Relative to Assets for Life and Health Insurers and Property and Casualty Insurers, 1975-1992**




SOURCE: Congressional Budget Office based on data from the American Council of Life Insurance and the Insurance Information Institute.

a. The data for the life and health industry do not include the mandatory securities valuation reserve, which regulators require these insurers to hold against declines in the values of their securities. Including this reserve with the capital and surplus would raise the ratio by an average of about 1.3 percentage points over this period. The ratio also does not include separate account assets because they are not backed by the capital and surplus of the industry.

# Conclusion

A solvency crisis in the insurance industry could harm the economy because the industry is an important financial intermediary. It is the second largest intermediary, after U.S.-chartered commercial banks. In recent years, it has supplied about one-fifth of all the funds provided to credit markets by private financial intermediaries. A solvency crisis would harm the industry's ability to spread the risk of economic loss widely throughout the economy and supply credit to businesses and government.